

Appl. No. 09/775,715  
Reply dated July 9, 2004  
Reply to Office Action mailed April 9, 2004

#### REMARKS

The present application and its claims are directed to a document ranking system based on user behavior and a document searching system based on user behavior. Claims 1-32 were pending prior to this response and now Claims 1-6 and 27-8 have been cancelled, Claims 7, 10, 13 and 20 have been amended and no claims have been added so that Claims 7-26 and 29-32 are pending following this response.

Applicant wishes to thank the Examiner for the courtesy of a telephonic interview as well as several follow-up conversations with Applicant's Attorney.

#### PRIOR ART REJECTION

In response to the Examiner's rejection of Claims 1- 32 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,855,015 to Shoham (hereinafter "Shoham"), Applicant respectfully traverses the rejection. In particular, the claims of the application are not rendered obvious by the prior art cited by the Examiner for the reasons set forth below. Therefore, Claims 7-26 and 29-32 are allowable over the prior art cited by the Examiner.

#### Claims 7, 10, 13 and 20

Independent Claims 7, 10, 13 and 20 recite a system and method for user behavior based ranking of a document. None of these claims are rendered obvious by Shoham. In particular, Claims 7, 10, 13 and 20 are patentable over Shoham at least because they recite determining a feature vector and then "modifying the feature vector for the document based on a sample of user actions captured during a search session so that the document is more highly ranked in response to the user actions." Furthermore, each claim recites "storing the modified document feature vector wherein the document feature vector for a document is modified and stored following each search session and sampled user action so that the modified document feature vector is utilized during and affects the results of every subsequent search session by every user" and "returning the same document to another user with the same query at a higher ranking due to the modified feature vector." The prior art does not disclose or suggest this combination of elements.

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Shoham does in fact generate a feature vector for a document. See Col. 11, lines 21-27. However, Shoham does not disclose or suggest modifying the feature vector of the document based on a sample of user actions captured during a search session. To support the above rejection, the Examiner cited Col. 12, lines 28-35 of Shoham which describes that each page (having a document feature vector  $\vec{V}$ ) is viewed by the user and receives an evaluation  $e_i$  (with an integer range of -5 to +5) which is then applied to a current query model (represented by query vector  $\vec{M}$ ) of the user to modify the query vector so that the query vector is adjusted to return better search results to the same user. This is shown explicitly by the equation  $(\vec{M} \rightarrow \vec{M} + \sum_{i=1}^p e_i \vec{V}_i)$  at Col. 12, line 32. Thus, this portion of Shoham describes that the search/query vector is modified by the user evaluation. Shoham does not describe, however, that the document feature vector ( $\vec{V}$ ) is modified at all.

During the telephonic interview, the Examiner took the position that the portion of the above equation in which the document feature vector is multiplied by the evaluation constitutes a modification of the document feature vector and therefore Shoham discloses this element of the claim. Applicant disagrees with this interpretation of Shoham as the document feature is only used to generate a new query vector. However, to further distinguish the claimed modified document feature vector from the alleged modified feature vector in Shoham, Applicant has clarified the claims to provide "storing the modified document feature vector wherein the document feature vector for a document is modified and stored following each search session and sampled user action so that the modified document feature vector is utilized during and affects the results of every subsequent search session by every user" which is not shown or suggested by Shoham. As discussed during the interview, Shoham modifies and stores a query vector for a user so that, for the same query by the same user, the search will return better results. In contrast, the claimed modified feature vector is stored and utilized during and affects the results of every subsequent search session by every user which is not shown or suggested by Shoham. Furthermore, Shoham does not disclose or suggest "returning the same document to another user with the same query at a higher ranking due to the modified feature vector as Shoham only permanently modifies the query vector which only affects the search results for the

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same user. Thus, Shoham does not suggest the invention as recited in Claims 7, 10, 13 and 20 and those claims are allowable over Shoham. Furthermore, the claims that depend from these independent claims are also allowable over Shoham for at least the same reasons as the independent claims as well as the reasons set forth in the prior response that have not been included herein.

#### CONCLUSION

In view of the above, it is respectfully submitted that Claims 7-26 and 29-32 are allowable over the prior art cited by the Examiner and early allowance of these claims and the application is respectfully requested.

The Examiner is invited to call Applicant's attorney at the number below in order to speed the prosecution of this application.

The Commissioner is authorized to charge any deficiencies in fees and credit any overpayment of fees to Deposit Account No. 07-1896.

Respectfully submitted,

GRAY CARY WARE & FREIDENRICH LLP

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By Timothy W. Lohge

Timothy W. Lohge  
Reg. No. 35,255  
Attorney for Applicant

GRAY CARY WARE & FREIDENRICH  
2000 University Avenue  
East Palo Alto, CA 94303  
Telephone: (650) 833-2055

Gray Cary\EM\7169277.1  
1220335-991180

Gray Cary\EM\7169277.1  
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